

WHAT IS CLAIMED IS:

1. A monitor assembly for a computer having a base, the monitor assembly comprising:  
5 a lid attached to the base;  
a screen assembly slidably attached to the lid; and  
an actuating mechanism coupled between the screen assembly and the lid connected to slide the screen assembly between a lowered position and a raised position.  
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2. A monitor assembly according to claim 1 wherein the screen assembly comprises a screen, a frame, and a thin backing made from a lightweight, high-strength material.
- 15 3. A monitor assembly according to claim 1 wherein the screen assembly comprises T-rails and the lid comprises T-slots which slidingly receive the T-rails.
4. A monitor assembly according to claim 1 wherein the lid comprises  
20 T-rails and the screen assembly comprises T-slots which slidingly receive the T-rails.
5. A monitor assembly according to claim 1 wherein the lid comprises  
25 flanges on lateral edges thereof for slidably receiving the screen assembly.
6. A monitor assembly according to claim 1 wherein the actuating mechanism comprises:  
a motor attached to the lid, the motor having a drive shaft; and  
at least one worm gear attached to the drive shaft.  
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7. A monitor assembly according to claim 6 wherein the actuating mechanism comprises at least one lifter gear rotationally attached to the lid

and operatively coupled to the worm gear, the lifter gear having a pin near an outer edge thereof, and wherein the screen assembly comprises a slot configured to slidably receive the pin of the lifter gear, whereby rotational motion of the motor is translated into linear motion of the screen assembly.

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8. A monitor assembly according to claim 7 wherein the actuating mechanism comprises a meshing gear in engagement between the worm gear and the lifter gear.

10 9. A monitor assembly according to claim 7 wherein the at least one worm gear comprises two worm gears, with one of the two worm gears having a right handed helix and the other of the two worm gears having a left handed helix, and wherein the at least one lifter gear comprises two lifter gears, each of the two lifter gears operatively coupled to be driven by  
15 one of the two worm gears.

10. A monitor assembly according to claim 9 wherein the actuating mechanism comprises a meshing gear in engagement between each of the two worm gears and the associated lifter gear.

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11. A monitor assembly according to claim 10 wherein each lifter gear and meshing gear has a plurality of holes therein for reducing a weight of the monitor assembly.

25 12. A monitor assembly according to claim 10 wherein each lifter gear and meshing gear has a cross-section which is thin relative to a thickness of the monitor assembly.

30 13. A monitor assembly according to claim 1 wherein the actuating mechanism comprises a member pivotally mounted to the lid, a pin projecting from the member into a transversely extending slot on the

screen assembly and a mechanism connected to pivot the member relative to the lid.

5 14. A monitor assembly according to claim 1 wherein the actuating mechanism comprises a pair of members pivotally mounted to the lid, a pin projecting from each member into a pair of transversely extending slots on the screen assembly and a mechanism connected to pivot the members relative to the lid.

10 15. A monitor assembly according to claim 14 wherein the pair of members comprise lifter gears and the mechanism comprises a pair of worm gears connected to drive the lifter gears.

15 16. A monitor assembly according to claim 7 wherein the lifter gear comprises a large diameter lifter gear, and wherein a distance between the raised position and the lowered position is approximately equal to the large diameter.

20 17. A monitor assembly according to claim 16 wherein the large diameter lifter gear provides a low overall gear ratio such that the motor has low power requirements.

25 18. A monitor assembly according to claim 7 wherein the worm gear prevents the screen assembly from moving unless the motor is turned.

19. A monitor assembly according to claim 7 comprising a limit switch in the slot connected to stop the motor from turning when the pin engages the limit switch.

30 20. A monitor assembly according to claim 6 wherein the motor and drive shaft are located below the screen assembly.

21. A monitor assembly according to claim 10 wherein the motor and drive shaft are located below the screen assembly and positioned directly below the meshing gears.
- 5 22. A monitor assembly according to claim 1 wherein the actuating mechanism comprises a motor coupled to drive a pair of worm gears by means of a right-angle drive, and a pair of lifter gears operatively coupled to the pair of worm gears.
- 10 23. A monitor assembly according to claim 22 wherein the right-angle drive comprises a helical gear.
24. A monitor assembly according to claim 10 wherein the lifter gears are replaced by eccentric cams.
- 15 25. A monitor assembly according to claim 6 wherein the motor is a brushless motor.
26. A monitor assembly according to claim 1 wherein the actuating mechanism comprises at least one cam-shaped lifter member that rotates within a cam-shaped or circular static cut-out within the screen assembly.
- 20 27. A monitor assembly according to claim 10 wherein the actuating mechanism comprises a motor mount moveable between an engaged position wherein the worm gears engage the meshing gears and a disengaged position wherein the worm gears do not engage the meshing gears to facilitate manual actuation of the screen assembly in the event of a power failure.
- 25 28. A monitor assembly according to claim 27 wherein the sliding motor mount comprises an eccentric cam mechanism attached to the lid to
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selectively disengage the motor and worm gears from a locked position with the meshing gears.

5 29. A monitor assembly according to claim 28 wherein the lifter gears are interlocking to allow for proper re-alignment in the event that the worm gears are disengaged from the meshing gears during manual lowering of the screen assembly.

10 30. A monitor assembly according to claim 1 comprising one or more stabilizing components mounted on a rear lateral aspect of the base.

31. A monitor assembly according to claim 30 wherein the stabilizing components comprise vertical hinges that lock in position once rotated outward by 90 degrees relative to the base.

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32. A monitor assembly according to claim 1 comprising a document holder comprising:

20 a compartment attached to a top of the screen assembly; and  
a holding member comprising means of holding a document, the holding member movable between an extended position wherein the holding member can hold the document, and a retracted position wherein the holding member is housed within the compartment.

25 33. A monitor assembly according to claim 32 wherein the holding member comprises:

30 a first rectangular member slidably received in the compartment;  
a second rectangular member slidably and pivotally coupled to a middle portion of the first rectangular member at a first end thereof; and,  
a "J"-shaped shelf foldably attached to a second end of the second rectangular member.

34. A monitor assembly according to claim 33 wherein the second rectangular member comprises a slot in the first end thereof, comprising a thumb screw for selectively holding the second rectangular member in fixed relation to the first rectangular member.
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35. A monitor assembly according to claim 33 wherein the first rectangular member comprises a generally vertically oriented hinge.
36. A monitor assembly according to claim 32 comprising a spring for
- 10 biasing the holding member into the extended position.
37. A monitor assembly according to claim 32 wherein the compartment is defined in a housing, the housing being selectively detachable from the screen assembly.
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38. A monitor assembly according to claim 1 comprising a document holder mounted to and moveable with the screen assembly.
39. A laptop computer comprising:
- 20 a base;  
a lid pivotally coupled to the base;  
a screen assembly slidably attached to the lid; and  
an actuating mechanism coupled between the screen assembly and the lid connected to slide the screen assembly between a lowered position
- 25 and a raised position.
40. A monitor assembly for a computer having a base, the monitor assembly comprising:
- 30 a lid attached to the base;  
a screen assembly slidably attached to the lid; and  
means for sliding the screen assembly between a lowered position and a raised position.